



City of Milwaukee

Laboratory System Improvement Program

Project Report

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Prepared by

City of Milwaukee Health Department Laboratory

<http://city.milwaukee.gov/LSIP>

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Glossary of Abbreviations

APHL	Association of Public Health Laboratories
ASCLS	American Society for Clinical Laboratory Science
ASM	American Society for Microbiology
AWWA	American Water Works Association
BESTD	Brady East STD Clinic
CDC	Centers for Disease Control and Prevention
DATCP	Department of Agriculture, Trade and Consumer Protection
DHS	Department of Health Services
DNC	Democratic National Convention
DNR	Department of Natural Resources
DPH	Department of Public Health
EPA	U.S. Environmental Protection Agency
ES	Essential Service
FBI	Federal Bureau of Investigation
HAI	Healthcare-Associated Infection
HCET	Health Care Education & Training
HERC	Health Emergency Readiness Coalition
LHD	Local Health Department
LPHL	Local Public Health Laboratory
LRN	Laboratory Response Network
L-SIP	Laboratory System Improvement Program
MCW	Medical College of Wisconsin
MHD	Milwaukee Health Department
MHDL	Milwaukee Health Department Laboratory
MMSD	Milwaukee Metropolitan Sewerage District
MOU	Memorandum of Understanding
MU	Marquette University
MWW	Milwaukee Water Works
PH	Public Health
PHL	Public Health Laboratory
PPWI	Planned Parenthood of Wisconsin
PreP	Pre-exposure Prophylaxis
SCACM	South Central Association for Clinical Microbiology
SME	Subject Matter Expert
SSCHC	Sixteenth Street Community Health Centers
STI	Sexually Transmitted Infection
USPS	United States Postal Service
WALHDAB	Wisconsin Association of Local Health Departments and Boards
WCLN	Wisconsin Clinical Laboratory Network
WEDSS	Wisconsin Electronic Disease Surveillance System
WSLH	Wisconsin State Laboratory of Hygiene

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- MHD Laboratory staff for their day-to-day commitment to excellence in laboratory operations and continued quality improvement efforts and initiatives.



Introduction

The City of Milwaukee Health Department Laboratory (MHDL) became the first public health laboratory (PHL) to adapt and implement the Association of Public Health Laboratories' (APHL) Laboratory System Improvement Program (L-SIP) at the local level in 2010. Again in 2018, MHDL subsequently was also the first local public health laboratory (LPHL) system to conduct a second assessment, or reassessment, to evaluate progress made and determine any new or follow-up steps for system improvement.

As a result of the assessment conducted in May 2018, two potential areas of need for continued strengthening were identified – Essential Services (ES) 2 and 5, the key ideas for which are described below.

Essential Service 2: Diagnose and Investigate Health Problems and Health Hazards in the Community

Key Idea 2.1.1: LPHL System assures effective provision of services at the highest level of quality to assist in the detection, diagnosis and investigation of all significant health problems and hazards.

Key Idea 2.1.2: LPHL System has necessary system capacity, authority and preparations in place to rapidly respond to emergencies that affect the public's health.

Essential Service 5: Develop Policies and Plans that Support Individual and Community Health Efforts

Key Idea 5.1.1: LPHL System obtains input from diverse partners and constituencies to develop new policies and plans and modify existing ones.

Key Idea 5.2.1: LPHL System and partners contribute their expertise and resources using science and data to inform and influence policy.

Key Idea 5.3.1: Plans and policies that affect **LPHL System** are routinely evaluated, updated and disseminated.

Goals and Objectives

As identified by APHL, the purpose of this project was to address a gap or need based on discussions held during Milwaukee's 2018 L-SIP assessment. In order to focus on improving system performance in the areas of ES 2 and 5, MHDL set two main project goals:

- 1) By convening a group of subject matter experts (approx. 20-25 attendees) to brainstorm in areas of public health importance, including routine surveillance, emerging health issues, emergency preparedness, response and effective communications, the **Advisory Group meeting** aims to strengthen partnerships among first responders, outbreak investigators and other system partners to optimally utilize public health resources in the community. The Advisory Group will form into Clinical and Environmental workgroups to discuss emergency response situations and related plans and policies for disseminating public health information. The recommendations of the Advisory Group meeting will then be used to execute the LPHL System Workshop and guide next steps.
- 2) Following the Advisory Group meeting, MHDL will host an **LPHL System-wide Workshop** for a group of approximately 60-80 L-SIP stakeholders. Members from the Advisory Group will lead various sessions of the workshop including presentations from LPHL system partner experts, with the expected outcome of providing current and emerging topics of clinical and environmental issues of public health significance to the community. The results of the workshop will be used to shape next steps for LPHL system improvements related to ensuring timely access to resources and strengthening partner-wide communications.



Planning and Organization

MHDL contracted RBJ Community Consulting and Ugland Associates to assist with planning and executing the above described events and project deliverables shown in the following chart.

TIMELINE								
Milestones	Early March	Late March	Early April	Late April	Early May	Late May	Early June	Late June
Advisory Group Meeting planning								
Reserve venue, hire facilitators								
APHL monthly milestone report								
Conduct Advisory Group Meeting								
LPHL System Workshop planning								
Reserve venue, hire facilitators & speakers								
APHL monthly milestone report								
Compile results of Advisory Group Meeting								
APHL monthly milestone report								
Conduct LPHL System Workshop								
Compile results of LPHL System Workshop								
Submit final report to APHL								

Advisory Group Meeting

An Advisory Group of approximately 25 LPHL system stakeholders convened for a half-day meeting on April 11, 2019, to focus on ES 2 and 5 and their key ideas. Discussions led to the identification of the locally informed goals, objectives and prospective activities outlined below. In order to ensure adherence to the known networks and existing capacities within systems, those with more clinical or environmental foci worked on their tasks with colleagues most aligned with those areas. The activities were suggested based on additional information gained during meeting discussions, but were not meant to be acted upon until after the final convening in June. During the June meeting, it was decided that attendees would have an opportunity to look at suggested activities and make suggestions about them as well as refine them.

<i>Essential Service #2: Diagnose and Investigate Health Problems and Health Hazards in the Community</i>
Short-Term Goal: Shared Clinical & Environmental
<i>1) Complete tabletop exercise: Examples- One Health, emergency preparedness and response to chemical/biological agents</i>
<u>Activities:</u> <ul style="list-style-type: none">1) Provide information about the Health Emergency Readiness Coalition (HERC)2) Invite speakers- Clinical and Environmental Health3) Conduct tabletop exercise (e.g. suspect disease outbreak, toxin or chemical exposure scenarios)4) Identify opportunities within the system partners (PHL communities) that could be shared and completed to enhance and improve response (e.g. monthly calls/webinars- local, state, Centers for Disease Control and Prevention (CDC) continuing education credits)
Medium-Term Goals: Shared Clinical & Environmental
<i>1) Prepare & planning exercise: Examples- Large public events, integrate PH laboratories' needs and capabilities (Democratic National Convention (DNC) presents unique large event planning for public health (PH) response)</i>
<u>Activities:</u> <ul style="list-style-type: none">1) Put together a multi-disciplinary team2) The team meets regularly with system partners to understand event logistics3) Identify risks, possible areas of need, and improvement ideas into the area
<i>2) Integrate labs into statewide training and exercise plan (Multi-Year Training and Exercise Plans)</i>
<u>Activities:</u> <ul style="list-style-type: none">1) Gather local team to review possible resources, overlap with agency-wide planning functions2) Work with local and state public authorities to ensure that local PHL is included in system-wide training and exercise plans

<i>Essential Service #5: Develop Policies and Plans that Support Individual and Community Health Efforts</i>
Short-Term Goal: Clinical
1) Initiate strategic discussions with the Communicable Diseases partners to discuss best use of laboratories statewide
<u>Activities:</u> <ol style="list-style-type: none"> 1) Identify key system partners at each local jurisdiction to participate in calls or meetings 2) Determine meeting schedule and draw up list of objectives, e.g. establish current protocols and practices, complete gaps/needs assessments 3) Identify financial/contractual issues for discussion especially when test results are needed quickly (or not needed quickly), etc., but financial agreements drive the testing location, which determines the length of time until test results are back 4) Organize host webinars/calls, based on PHL system needs assessments
Short-Term Goal: Shared Clinical & Environmental
2) Create regular opportunities for discussions among local public health departments, with the goal of better alignment with available/potential services, learning opportunities
<u>Activities:</u> <ol style="list-style-type: none"> 1) Starting with the list of participants in L-SIP activities, and other listserv, generate list of subject matter expert (SME) names in partners' agencies, help put together rotating quarterly (or frequency of choice) meetings of representatives to work toward stated goal 2) Encourage participants to tour local PHL and identify potential system partners' resources and benefits 3) Create a roster of contacts to facilitate frequent meeting and improve communications
Medium-Term Goals: Shared Clinical & Environmental
1) Share policy and procedures within the statewide clinical and public health laboratory networks
<u>Activities:</u> <ol style="list-style-type: none"> 1) Building on the short-term goal above, write up and present findings from an examination of laboratory policies, procedures, gaps, etc. 2) Encourage discussion about lab policies and procedures statewide at regularly held events (conferences, meetings, conference calls, etc.)
Long-Term Goals: Shared Clinical & Environmental
1) Create system-wide database for subject matter experts in areas of public health practices/actions, with academics, clinicians, public health and others
<u>Activities:</u> <ol style="list-style-type: none"> 1) Identify areas of expertise for database 2) Identify host for housing the database (local PH agency or other partners)

- 3) Establish criteria for subject matter expert qualifications
- 4) Populate database and promote it for system's use
- 5) Identify method for researchers, students and interns to support database maintenance

Long-Term Goals: Shared Clinical & Environmental

2) Through increasing knowledge about laboratory services, create public health sector and community support for MHDL.

Activities:

- 1) Offer frequent touring PHLs that clearly identify to participants the need for strong laboratory services to support local public health system
- 2) Provide information brochure (print/online) about local PHL and regularly update press releases or other relevant information to keep system partners updated on ongoing activities, lessons from outbreaks, share prevention tips, etc. (best practices)

3) Create a process for greater sharing of data already collected by local public health organizations, municipalities.

Activities:

- 1) Create a checklist of methods for categorizing data collected at agencies/municipalities
- 2) During regularly convening meetings outlined in other goals (above), share this checklist and discuss information that would be helpful to share with each other
- 3) Share de-identified EHR, or other data, to inform local public health planning and policy
- 4) Determine method for sharing information based on the types of information identified for sharing (in-person, online via de-identified database, etc.)

Workshop Meeting Summary

On June 13, 2019, 38 professionals from regional, state and local public health and medical organizations met to discuss next steps in Milwaukee's L-SIP. Based on the significant work of the Advisory Group, the following meeting objectives were drafted and reviewed at the beginning and end of the June workshop:

- Strengthen networks and understanding of the ways we can all work together to diagnose and investigate health problems and health hazards in the Greater Milwaukee area.
- Improve policies and plans that support individual and community health efforts.
- Establish work groups that will continue to build on goals and objectives established during the meeting.

In order to focus on the need to build existing professional and personal networks, work groups were assigned by counting off by the number of groups desired (five and four, respectively, by activity) for the June workshop, rather than by professional affiliation or a similar/shared work focus (clinical or environmental). MHDL staff then participated in discussions of their own choice (and some chose to float between discussions). Several activities were utilized to facilitate strategic planning as described below.

Social Network Webbing Exercise

Attendees were asked to form five groups, and were randomly assigned one of the five goal areas through which they worked on a Social Network Webbing exercise. Borrowed from a set of meeting facilitation exercises at www.liberatingstructures.com, it is useful in settings like the June 13 meeting because it: “...quickly illuminates for a whole group what resources are hidden within their existing network of relationships and what steps to take for tapping those resources. It also makes it easy to identify opportunities for building stronger connections as well as new ones. The inclusive approach makes the network visible and understandable to everybody in the group simultaneously. It encourages individuals to take the initiative for building a stronger network rather than receiving directions through top-down assignments. Informal or loose connections—even your friends’ friends—are tapped in a way that can have a powerful influence on progress without detailed planning and big investments.”

Attendees were then tasked with creating visual “webs” that addressed five short- and medium-term goals that had been outlined in the April 2019 Advisory Group meeting. The goals are presented in the table that follows.

<i>Goal Areas for Social Network Webbing Exercise</i>
<i>1) Prepare & planning exercise: Examples- Large public events, integrate PHL needs and capabilities (DNC presents a unique large event planning for PH response*)</i>
<i>2) Integrate labs into statewide training and exercise plan (Multi-Year Training and Exercise Plans)</i>
<i>3) Initiate strategic discussions with the Communicable Diseases partners to discuss best use of laboratories statewide</i>
<i>4) Create regular opportunities for discussions among local public health departments, with the goal of better alignment with available/potential services, learning opportunities</i>
<i>5) Share policy and procedures within the statewide clinical and public health laboratory networks</i>

** Milwaukee, Wisconsin has been chosen as the location for the Democratic National Convention in 2020, and anticipates having a rapid, temporary influx of at least 50,000 people from all 50 states as well as a number of international travelers. The Advisory Committee identified it as an opportunity for planning for public health situations that could arise.*

Webbing Process

The five identified goals for the Social Network Webbing Exercise were assigned to groups to create social network “webs” using Post-It notes that were color-coded through the following web color keys:

- Yellow:** Who do you know that is already active in this task?
Pink: Who would still need to be involved in this work?
Blue: Who would be able to block progress toward your goal?
Orange: Who could help improve progress toward your goal?
Green: How will you connect with people to overcome obstacles, etc.?

Groups then got to work using large Post-It sheets that were shared with the larger group and remained displayed throughout the work day. The results of each group’s discussion is summarized in the charts that follow.

Goal 1) Prepare & planning exercise: Examples- Large public events, integrate PHL needs and capabilities (DNC presents a unique large event planning for PH response*)	
Who do you know that is already active in this task?	<ul style="list-style-type: none">• <i>Health department: local, state</i>• <i>Emergency medical services (Office of Emergency Management), Fire, Police</i>• <i>Utilities</i>• <i>Local clinics & physicians</i>• <i>Academics</i>
Who would still need to be involved in this work?	<ul style="list-style-type: none">• <i>Hospitals, HERC</i>• <i>Urgent cares, primary care doctors</i>• <i>Utilities, water works, Milwaukee Metropolitan Sewerage District (MMSD)</i>
Who would be able to block progress toward your goal?	<ul style="list-style-type: none">• <i>Facility for exercise (large enough, good location)</i>• <i>Money</i>• <i>Flow of information from systems to individuals</i>• <i>Active resources (sharing of them)</i>• <i>Experience</i>• <i>Databases</i>
Who could help improve progress toward your goal?	<ul style="list-style-type: none">• <i>Communication</i>• <i>Incident Command System</i>• <i>Milwaukee Water Works (MWW)</i>
How will you connect with people to overcome	<ul style="list-style-type: none">• <i>Extend Network</i><ul style="list-style-type: none">○ <i>Invitations</i>

obstacles, etc.?	<ul style="list-style-type: none"> ○ <i>Participation</i> ● <i>Incident Report via blast emails</i> ● <i>Surveillance (larger scale)</i> ● <i>Drills annually</i> ● <i>Coordination</i>
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Goal 2) Integrate labs into statewide training and exercise plan (Multi-Year Training and Exercise Plans)	
Who do you know that is already active in this task?	<ul style="list-style-type: none"> ● <i>Wisconsin Department of Natural Resources (DNR) Lab</i> ● <i>MHDL</i> ● <i>Wisconsin Department of Health Services (DHS)</i> ● <i>MWW Water Quality Lab</i> ● <i>Wisconsin State Laboratory of Hygiene (WSLH)</i>
Who would still need to be involved in this work?	<ul style="list-style-type: none"> ● <i>Commercial or reference lab</i> ● <i>Clinical lab</i> ● <i>Emergency management trainers</i> ● <i>Health Care Education & Training (HCET) facilitators/trainers</i> ● <i>Planned Parenthood of Wisconsin (PPWI)</i> ● <i>Brady East STD (BESTD) Clinic</i> ● <i>CDC</i> ● <i>APHL</i> ● <i>HCET</i> ● <i>American Society for Microbiology (ASM)</i>
Who would be able to block progress toward your goal?	<ul style="list-style-type: none"> ● <i>APHL</i> ● <i>American Water Works Association (AWWA)</i> ● <i>U.S. Environmental Protection Agency (EPA)</i> ● <i>CDC</i> ● <i>HCET</i> ● <i>DNR</i> ● <i>DHS</i> ● <i>American Society for Clinical Laboratory Science (ASCLS)</i> ● <i>South Central Association for Clinical Microbiology (SCACM)</i> ● <i>WSLH</i>

Who could help improve progress toward your goal?	<ul style="list-style-type: none"> • <i>Funding</i> • <i>Regulations (or lack thereof)</i> • <i>Capacity (staff)</i> • <i>Turnover (could help or hinder)</i> • <i>Geography (proximity to resources)</i> • <i>Jurisdictional understanding (lack of memoranda of understanding)</i> • <i>Public buy-in, engagement</i>
How will you connect with people to overcome obstacles, etc.?	<ul style="list-style-type: none"> • <i>Funding: advocacy, lobbying, educating elected officials</i> • <i>Connect with the EPA, CDC to secure technological advances</i> • <i>ASM: through training, needs assessment</i> • <i>DNR: Through regional meetings and communications</i> • <i>Through workforce training</i> • <i>Public awareness will be built through public buy-in, engagement</i>



Goal 3) Initiate strategic discussions with the Communicable Diseases partners to discuss best use of laboratories statewide	
Who do you know that is already active in this task?	<ul style="list-style-type: none"> • <i>Lindsey Page: infectious disease epidemiologist</i> • <i>Emergency Preparedness Coordinator</i> • <i>City of Milwaukee Health Department (MHD)</i> • <i>Dr. Joyce Sanchez, Medical College of Wisconsin (MCW)/Froedtert Travel Clinic and Infectious Disease Specialist</i> • <i>Dr. Pete Shult, Alana Sterkel, WSLH, Wisconsin Clinical Laboratory Network (WCLN)</i> • <i>Wisconsin Department of Health (DPH)</i> • <i>Infectious Control Practitioners</i>
Who would still need to be involved in this work?	<ul style="list-style-type: none"> • <i>Infectious Control Practitioners</i> • <i>One Health Initiative (Environmental, animal, human)</i> • <i>Others</i>
Who would be able to block progress toward your goal?	<ul style="list-style-type: none"> • <i>Geographic or jurisdictional obstacles</i> • <i>Prioritizing time and resources</i>
Who could help improve progress toward your goal?	<ul style="list-style-type: none"> • <i>Buy-in from administrators</i>
How will you connect with people to overcome obstacles, etc.?	<ul style="list-style-type: none"> • <i>Building buy-in from administrators</i> • <i>Reach out to One Health (there are One Health offices within several organizations, see which one specifically fits)</i>

Goal 4) Create regular opportunities for discussions among local public health departments, with the goal of better alignment with available/potential services, learning opportunities	
Who do you know that is already active in this task?	<ul style="list-style-type: none"> • <i>Continuum of Care</i> <ul style="list-style-type: none"> ○ <i>County mental health</i> ○ <i>Housing</i> ○ <i>Outside experts</i> ○ <i>Free clinics</i> ○ <i>Shelters</i> • <i>HERC</i> • <i>WI Association of Local Health Departments & Boards (Health Officers in SE Region)</i> • <i>Local Emergency Planning Committee</i>

Who would still need to be involved in this work?	<ul style="list-style-type: none"> • <i>Local health department labs</i> • <i>WSLH</i> • <i>University health officers</i> • <i>State regional representatives?</i> • <i>Local health department epidemiologists</i> • <i>Universities like University of Wisconsin-Milwaukee (UWM), Marquette</i>
Who would be able to block progress toward your goal?	<ul style="list-style-type: none"> • <i>Coordinated communication</i> • <i>Funding/unified resources</i> • <i>Time to build relationships prior to crises</i> • <i>Turnover in staff with loss of institutional knowledge</i> • <i>Competitive grant process</i> • <i>Lack of sharing or knowledge of policies</i>
Who could help improve progress toward your goal?	<ul style="list-style-type: none"> • <i>Right people at the table</i> • <i>Clear chain of command</i> • <i>Unity of command</i>
How will you connect with people to overcome obstacles, etc.?	<ul style="list-style-type: none"> • <i>(Nothing added in this category)</i>

Goal 5) Share policy and procedures within the statewide clinical and public health laboratory networks	
Who do you know that is already active in this task?	<ul style="list-style-type: none"> • <i>Jordan</i> • <i>MHD</i> • <i>Planning & Policy</i> • <i>Marquette University</i> • <i>David Webb, WSLH</i> • <i>Darren Rausch</i> • <i>Carrie Baranowski, HCET</i> • <i>Family Planning Network</i> • <i>Sexually Transmitted Infection (STI) Network</i> • <i>Mark, Federal Bureau of Investigation (FBI)</i> • <i>Nick Tomaro, MHD</i>
Who would still need to be involved in this work?	<ul style="list-style-type: none"> • <i>Laboratories that public health uses</i> • <i>Private labs</i> • <i>Wisconsin Division of Agriculture, Trade and Consumer</i>

	<p><i>Protection (DATCP)</i></p> <ul style="list-style-type: none"> • <i>State of Wisconsin Health Services</i> • <i>HERC (7 regions)</i> • <i>CDC</i> • <i>Universities and colleges with labs</i> • <i>Training and technical assistance organizations that are contracted by State of WI</i> • <i>Community organizations</i> • <i>EPA/Feds</i> • <i>Wisconsin Association of Local Health Departments & Boards (WALHDAB)</i> • <i>Other PH agencies, 87 of them in Wisconsin</i>
Who would be able to block progress toward your goal?	<ul style="list-style-type: none"> • <i>Privacy, criticism, fear could be obstacles</i> • <i>Competing laboratories</i> • <i>Lack of time, competing priorities</i> • <i>Testing funding can vary by congressional district, geography, budget, other factors</i> • <i>Money, money, money</i> • <i>Clinical labs are decreasing business ties with low-volume clients</i> • <i>Accrediting agencies differ</i>
Who could help improve progress toward your goal?	<ul style="list-style-type: none"> • <i>State STI or other organizations allowing regional testing</i> • <i>Annual state meeting for collecting repository of policy</i>
How will you connect with people to overcome obstacles, etc.?	<ul style="list-style-type: none"> • <i>Zoonotic diseases such as TB, statewide network to animal-related resources</i> • <i>State public health region, staff</i> • <i>Disseminate via existing networks, at regular meetings</i> • <i>Publish guidelines</i> • <i>Regional network meetings (WALDHAB), five more statewide</i>

Guest Speakers

Two guest speakers were invited to speak because of the cross-sector nature of their work and regular coordination with the Milwaukee Health Department Laboratory. Dr. Julie B. Schuller, Executive Director of Sixteenth Street Community Health Centers (SSCHC), spoke of three ways that they have partnered with MHD, namely: the Growing Healthy Soil Program focused on lead contamination/remediation, STI testing, and HIV Pre-exposure Prophylaxis (PrEP). Karen Dettmer, Superintendent of Milwaukee Water Works, presented on their work toward creating and educating people about safe drinking water for Milwaukee residents.

Tabletop Exercises

The first goal identified by the Advisory Committee under Essential Service 2 was to complete a tabletop exercise. Much of the afternoon of June 13 was spent doing work in cross-sector groups, who examined three scenarios to imagine how they might approach the situations if they occurred in the current system with resources that exist right now. The first scenario was deemed by the Laboratory Director of the Milwaukee Health Department, Dr. Sanjib Bhattacharyya, to be the most complicated. Two groups, therefore, spent time talking about Scenario One, while Scenarios Two and Three were the focus of one group each. The three scenarios are shown below.

Scenario 1: Respiratory Illness in DNC2020 Convention-goer

An individual traveled from St. Louis to be part of the Missouri delegation to the 2020 Democratic National Convention. He stayed at a large hotel in downtown Milwaukee for five days. He is 55 years old and has a 78-year-old aunt who lives in an assisted living facility in northwestern Milwaukee. He visited her there, shared a meal with her, drank tap water with his lunch, and spent time near a water fountain in the building's atrium. Eight days after returning to St. Louis, the man developed shortness of breath and a low grade fever (~100°F) which progressed to pneumonia. The man's aunt, who is on oxygen therapy due to advanced COPD, was admitted to an area hospital through the emergency department after developing a fever and experiencing worsening shortness of breath.

Scenario 2: Infectious Disease in Traveler

A man who traveled from Milwaukee through O'Hare to Israel to spend Passover with his family had an unknown vaccination history. About 10 days after returning to Milwaukee, he developed symptoms that included a low fever, runny nose, conjunctivitis, and small white spots in the buccal mucosa. He recovered from his symptoms but attended at least two Shabbat services within their Orthodox community during a time when he might have been contagious. His wife's immunization records show that she is current on all recommended vaccinations, but her concerns about the safety of vaccines mean that their 3- and 1-year-old are behind on their immunizations.

Scenario 3: Unknown/Suspicious Powder

A local TV talk show host and two city-level elected officials receive envelopes through the US Mail that are torn and have a powder leaking from them. The letters looked like the personal correspondence that TV viewers or constituents frequently send in and did not cause alarm to the recipients until they opened them and found that there was powder inside. There were no notes inside the envelopes. The envelopes were not an unusual size or shape and did not have any noticeable odor or discoloration. The three recipients were taken to local hospitals for observation and testing, and local law enforcement was called.

Each attendee was provided with copies of the scenarios and worksheets that asked each group to respond with the following information:

- 1) Identify the system or agency that would be involved in a response*
- 2) Identify steps you would need to take to involve/generate a response from each system or agency*
- 3) Identify individuals or agencies that would be integral in each response*
- 4) Write responses, prepare to report out to larger group*



Scenario 1: Group Response #1

This group gathered what pertinent information they could about the two individuals discussed in the story, then imagined possible outcomes or courses of action. Person A was the elderly aunt with COPD. Their process included tallying who might need to be involved in a diagnosis/history gathering process, including: the residential living facility, the EMS that transported her, the hospital system that may or may not have isolated her based on testing, and the clinical (likely on-site) laboratory that would provide results and diagnosis. The group was careful to differentiate that at this point, if the patient did not have a reportable disease this would mean the end of any epidemiological process beyond the patient. If the patient were to have a reported disease—they suspected possible *Legionella*—this would be reported to the local public health authorities and could involve the state laboratory and possibly its specific environmental functions due to circumstances at the residential living facility (testing the fountain, or other possible reservoirs of infection). The communicable disease program, in particular, would be involved at the local health department. The decision would need to be made whether to do additional contact investigation as well, though *Legionella* is not typically transmitted from person to person. Epidemiological information might include finding out whether there is a problem in the cooling tower at the hotel, the fountain at the assisted living facility, etc. This group also noted that a younger man with a low fever and uncomplicated pneumonia might not get additional testing; his aunt might be more likely to get additional testing to determine the infection with more precision.

Person B's history (the convention-goer/nephew), started with the health care provider (hospital system or clinic) that first treated him. The patient may have received treatment for pneumonia without a laboratory test, which would not be unusual. If he received a laboratory test and turned out to have *Legionella*, the same process would be followed with Person A in the earliest stages. The process after that, however, would be considerably more complicated. Given the history of *Legionella* becoming transmissible in heating, ventilation and air conditioning systems in some previous cases, the hotel where the man stayed, the convention facility, hotel and tourism agencies, and the man's personal contacts might need to be alerted. There was the possibility of a large number of potential exposures due to travel.

Scenario 1: Group Response #2

This group noted that four main entities would need to become involved, namely: the hospital, the state laboratory, the Wisconsin Department of Health Services (DHS), and the long-term care facility administrators. The likely process of investigating this would be to begin with the attending physician, who would order clinical laboratory results. Those results, if determined to be positive for *Legionella*, would possibly result in the notification and involvement of the Healthcare-Associated Infection (HAI) division within the DHS, which would then inform the long-term care facility, potentially interview other residents for symptoms, and test the water in the fountain. Samples of specimens collected from patients and at various locations (fountain, tap water) at the assisted living facility might also be sent to the state laboratory for testing. Someone from the local health department might be assigned to work on the case depending on the circumstances. This group noted that *Legionnaires'* disease is not reportable

between states, so even if both individuals in this case tested positive for it, without a thorough epidemiological investigation and communication between key people in the two states, they might never become known to each other.

Scenario 2 Response

This scenario involved two major levels of involvement and response, namely:

- 1) Public health clinical laboratories, clinics/hospital systems, local, state and federal health agencies, schools, community groups (namely members of the Orthodox Jewish community of which this family is a part), media, and law enforcement.
- 2) The response would involve public outreach (both broad and targeted), possibly involving local law enforcement with quarantining family and contacts, testing the family and its contacts, encouraging vaccination, and contact tracing by local health department officials.

Any information that was collected would be entered into the Wisconsin Electronic Disease Surveillance System (WEDSS), and may need to involve the different communities that this traveler was involved with or passed through. It could involve airports, airlines, restaurants, religious entities, schools, local health departments, and others. His family would need to be tested for immunity and offered the opportunity to get vaccinated. The CDC could be involved due to his international travel.

There was an extended discussion in this group of the implications of Wisconsin's laws around vaccinations. Wisconsin is one of a handful of states to allow broader exemptions for vaccines. The workgroup discussed potential partnering with the local health department (LHD) (e.g. MHD) towards outreach, education and advocacy efforts towards broadening immunizations exemptions to the local elected officials to lobby at the state level. Since LHD staff are not in a position to lobby, partnering with elected official would be critical. Examples were recent New York state decision of immunizations.

Scenario 3 Response

The first step would be to establish the credibility of the threat, and do a risk assessment. The U.S. Postal Service, first responders like Milwaukee Fire Department and its special HAZMAT-trained officers would be alerted, and possible field testing would occur. Everyone would be on "alert status." WSLH and MHDL would become involved, and the WSLH would put sentinel labs on alert, perhaps alert local hospitals, clinics, emergency rooms in case the powder caused chemical or biological reactions and these other individuals began to show up for care. The MHDL would likely contact the CDC and its Laboratory Response Network (LRN) individuals to determine next steps based on the outcome of WSLH testing. Testing might take up to 24 hours, so there would be protocols activated for clearing locations where the envelopes passed to ensure that there would not be any more potential exposures to the suspicious powder. If, after 24 hours, the powder was determined not to be an environmental or biological hazard, the response would stop. If, after 24 hours (testing completed), it was found to be hazardous, then the activation of the incident command system would go into effect and would involve the CDC's Emergency Operations Center nationally. Locally, there would be a joint press conference

and a media advisory process that would involve the public information officer. The need to make sure that the incident was handled carefully with the media, especially because it involved a member of the media, was discussed. The emphasis was on informing, but not creating panic.

Follow-up processes might include prophylaxis for the post office staff, elected official staff, and television station staff. Stockpile activation might also need to occur if the exposure was deemed broad enough. BioWatch would be put on alert until the threat was gone, a complete risk assessment might be done, and for a time, enhanced surveillance and epidemiology might go into effect.



Next Steps and Recommendations

Challenges and Lessons Learned

- Need to continually educate participants on the system concept and emphasis
- Improve navigation of planning process with identifying partners
- Partners' ability to engage with workgroup and reduce silos practices
- Missing stakeholders – hospital/healthcare organizations, media, elected officials

Next Steps

The results of the June meeting outline several areas for possible ongoing laboratory system improvement. Five work groups were set up to address these topics, and people from local and state organizations have already signed up to begin this work. The five work groups include:

- **Communications:** Policies, opportunities, changing current communication practices related to outbreaks, emerging threats, etc.
- **Training & Exercises:** Emergency response, preparations for health hazards, etc.
- **Policy & Practice:** Examining and improving Public Health Laboratory response
- **Database:** Setting up a database of subject matter experts and the ownership of populating it, maintaining it, and selection of subject matter experts.
- **Data Sharing & Dissemination:** How to share data, how to make it available, and expertise in databases.

Recommendations

- Immediate follow-up with meeting attendees that signed up for work groups
- MHD staff may want to think about some guidelines they want work groups to follow when meeting and setting/working toward goals
- Looking into results from social network webbing activity and sharing responses with appropriate meeting attendees or work group members for follow up
- Establish key stakeholders and next steps in the evaluation of inclusion and improvement of Essential Services 2 and 5 in MHD core functioning
- Extend invitations to work groups for those unable to attend, especially to large health care/hospital systems, as they were underrepresented at key meetings

References

- 1) City of Milwaukee Health Department L-SIP Assessment Report – May 10, 2018. <https://city.milwaukee.gov/ImageLibrary/Groups/healthAuthors/LAB/PDFs/L-SIP/2018LSIPAssessmentReport-FINAL.pdf>.
- 2) Su, T. Lab Matters. L-SIP increases assessment, reassessment numbers. Summer 2018 p18-19. <https://city.milwaukee.gov/ImageLibrary/Groups/healthAuthors/LAB/PDFs/L-SIP/LabMattersSummer2018-L-SIPupdate.pdf>.
- 3) Bhattacharyya S. Milwaukee's L-SIP – 2018 assessment & next steps. Oct 19, 2018. Webinar. <https://city.milwaukee.gov/ImageLibrary/Groups/healthAuthors/LAB/MilwaukeeL-SIP2018Assessmentwebinar10-19-18.mp4>.
- 4) Bhattacharyya, S., *et. al.* Milwaukee's Laboratory System Improvement Program 2018 Reassessment and Next Steps. Association of Public Health Laboratories (APHL) 2019 Annual Meeting: June 3-6, 2019; St. Louis, MO.

Appendix A

Laboratory System Improvement Program (L-SIP) Advisory Group

April 11th 2019

UWM Zilber School of Public Health

Objective

“Review and finalize next steps, activities, and other key decisions related to the two essential service areas identified in 2018 in preparation for the June 2019 meeting.”

Agenda

8:30 am	Registration/Continental Breakfast
9:00 am	Welcome and Meeting Overview
9:20 am	Networking Activity #1
9:30 am	Breakout Groups: Essential Services #2 & #5 <ul style="list-style-type: none">• Clinical• Environmental
10:45 am	Break
11:00 am	Brainstorming Activity #2
11:30 am	Summary, Evaluation and Next Steps
12:00 pm	Adjourn

Appendix B

Milwaukee Health Department Laboratory System Improvement Workshop

June 13th 2019

Miller Room, Milwaukee WI

Objectives

- 1) *Strengthen networks and understanding of the ways partner can work together to diagnose and investigate health problems and health hazards in the Greater Milwaukee area.*
- 2) *Improve policies and plans that support individual and community health efforts.*
- 3) *Establish work groups that will continue to build on goals and objectives established during the meeting.*

Agenda

8:30 am	Registration/Continental Breakfast
9:00 am	Welcome and Meeting Overview
9:30 am	Network Webbing
10:45 am	Break
11:00 am	Guest Speaker- <i>Dr. Julie Schuller, Sixteenth Street Community Health Centers</i>
11:30 am	Guest Speaker- <i>Karen Dettmer, Superintendent, Milwaukee Water Works</i>
12:00 pm	Catered Lunch
1:00 pm	Tabletop Exercise
2:00 pm	Work Group Discussion
2:45 pm	Closing
3:00 pm	Adjourn

Appendix C

L-SIP Advisory Group – April 11, 2019 Evaluation Results

14 of 26 participants returned their evaluation forms. This is a summary of their responses.

Utility of Meeting:	SUPERB 5	4	GOOD 3	2	POOR 1	NO RESPONSE
Stated objectives of meeting were met	2	12				
Dialogue was useful	7	7				
I support the efforts being made	9	5				
Next steps are clear	1	12				1
Meeting was a good use of my time	4	9	1			
Meeting Arrangements:						
Advance notice of the meeting	5	3	6			
Meeting room accommodations	7	7				
Advance materials for meeting were useful	3	6	5			
Advance materials were received with time to review	4	5	5			
Flow of Meeting:						
Started on time	10	4				
Clear objectives for meeting	5	9				
Agenda followed or appropriately amended	8	6				
Facilitation was effective	10	4				
The “right” people were at the meeting	6	6		1	1	

Comments

Below is a summary of comments solicited from participants for each of two questions on the evaluation.

What worked?

Good mix of partners, good input
Great meeting, excellent networking
Many new faces
Excellent facilitation, use of time
Glad to see WSLH
I really like the 1-2-4 method, lightning fast and effective; very good meeting
Good job & good meeting; facilitation worked
Good way to understand more about stakeholders in laboratory organizations and network
Great networking and communication

What could be improved?

Provide full folder contents as “read ahead” for better understanding
Subject needs discussions
So hard to capture range of ideas generated so quickly, not sure how to fix that.
Need WSLOH director & decision makers from other big lab systems
Commercial labs needed
Just execution going forward will be the hard parts
Roster

Appendix D

L-SIP Workshop – June 13, 2019 Evaluation Results

21 of 38 participants returned their evaluation forms. This is a summary of their responses.

Utility of Meeting:	SUPERB 5	4	GOOD 3	2	POOR 1	NO RESPONSE
Stated objectives of meeting were met	4	12	4	1		
Dialogue was useful	10	11				
I support the efforts being made	11	8	3			
Next steps are clear	5	5	10	1		
Meeting was a good use of my time	6	10	4	1		
Meeting Arrangements:						
Advance notice of the meeting	12	5	4			
Meeting room accommodations	18	3				
Advance materials for meeting were useful	5	9	5			2
Advance materials were received with time to review	6	9	3		1	2
Flow of Meeting:						
Started on time	15	5				
Clear objectives for meeting	10	10	1			
Agenda followed or appropriately amended	12	9				
Facilitation was effective	14	7				
The “right” people were at the meeting	5	12	4			

Comments

Below is a summary of comments solicited from participants for each of two questions on the evaluation.

What worked?

- Group exercises
- Small work groups – putting the scenarios in action
- Group activities were helpful
- Tabletop exercises, scenario
- Speakers were interesting and their presentations on target
- Good mix of activities to allow collaboration and networking
- Good speaker choices
- Format
- Networking was helpful and productive
- Sixteenth Street (Community Health Centers)/Planned Parenthood and UWM campus health agencies that deliver care and do public health were present, which was great
- Facilitated exercises
- Great facilitation, and the group organization was a great way to mix up individuals and maximize contacts

What could be improved?

- Broader environment – schools/academia, residential living, media
- More healthcare representatives (i.e. Aurora, Wheaton, ProCare, etc.)
- The role of public health in the future
- Pace and moving into groups
- More DHS people
- Expand the groups in attendance
- Large healthcare systems with the exception of Children's were notably absent
- It would be helpful to acknowledge why the various organizations were present since there was a vast variety of organizations